Notes on Project 32.2471

P. 1

Preface the Introduction with a short Summary which states the problem, the approach, and the conclusion.

P. 1, Introduction

Amend first sentence as shown, quote Khrushchev's statement so as to place it before the reader, and source the quotation.

P. 1, para. 1, second sentence

More appropriate to a conclusion than to an introduction.

P. 1, para. 3

Unnecessarily modest. Drop and state instead: "This study is limited to the meaning of the concept, "seriality of production" in the Soviet machine building industry; no effort has been made to consider its use in other industries such as metallurgy or chemistry.

P. 2, ll , 1-4

Overcondensed. Points 1) and 2) are not of equal importance. The point made under 1) is major in nature and needs to be developed at a little more length for emphasis. It could well be broken out into 1) and 2). The present 2) is of related bu subordinate significance and could be incorporated into the next paragraph.

P. 2, 2d full para., 1st sentence.

Meaning not clear.

P. 2, 3d para., 2d line

"Number of products " is ambiguous. Isn't reference here to the volume of production on the one hand and organization on the other? See also top of p. 3 and p. 3, lines 6, 10. Numbers and quantity are appropriate, but when coupled with the phrase "of products manufactured" lead to the

Pp. 4-5

Headings of items (2) and (3) are essentially the same. Is not (3) a further development of (2)?

P. 7, ll 8-9

Are tolerances necessarily large? Does this not depend on the nature of the equipment? Compare with the next sentence on custom fitting. The examples given are good but include only non-precision equipment. Wouldn't precision equipment also qualify, such as special machine tools, scientific apparatus, tool and die making?

P. 7, last line

Do all aircraft qualify for large series?

Pp. 8-9

The quantitative analysis of seriality does not look right. Based on the examples on page 9, machining now takes 3 minutes and is therefore in mass production (Ks = 3/3 = 1). If a new, higher speed machine tool were introduced, which reduced machining time to 1 minute, this operation would be downgraded to large series production (Ks = 3/1 = 3). Has the author of source 10 made a mistake? Unless this can be cleared up let's drop the whole section (pp. 8-9), since no real use of this formula is made in the paper.

Pp. 7-9

Insert reference to source 10.

P. 11, 1st and 2d full paras.

Are these contradictory? In para. 1, the production of a batch of 50 engines of 500 to 1,000 hp is said to be in large series production. In para. 2 the production of a batch of 15-50 marine diesel engines of 600 to 1,000 hp is stated to comprise small series production. If these differences are based on the practice of particular plants and industries this fact should be noted here as it is later in the conclusion to the paper (p. 12). Show time units in both paras.

P. 13, last para.

The basis for reasoning that the output of the ICBM ranges from 25 to 200 units is not clear. If based on Table 1, this would seem to equate "average size and complexity" with medium series and medium size in Table 1. But we know only the size and complexity, not the type of series or the output. From Table 1, if the ICBM is a large piece of equipment, its output could range from 2 to over 50 per year.

Compare also with p. 11, last complete para., where annual production of 50-300 marine diesels of 600-1,000 hp are said to comprise medium series production. If an ICBM is considered as more complex than a medium-sized marine diesel, wouldn't annual production of 50-200 ICBMs comprise large series production

P. 16, Table 2, marine diesels

Compare with p. 11, 2d full para., where annual production of 50 marine diesels of 600-1,000 hp is said to constitute small series production. From Table 2 it appears that annual production of 50 engines of this size is on the borderline between small and medium series production and could just as well be categorized as medium series. The comment made above with reference to p. 11, para. 1 still applies.